Claims

1. A web-based computer system for enabling web applications at a system client, comprising:

a system client that a system user uses to interact with the web-based computer system, with the system client at least comprising,

client manager for controlling processing for manipulating and displaying data information received from a central server, and providing means for manipulating content of web applications at the system client,

a display for displaying data information from the central system and providing an interface to web applications,

client controls for providing the system user with an interface for interacting with web applications to request data information from a system storage system based on an intent and a purpose of the web applications, to cause the display of the data information that is received by the client manager from the central server, to manipulate data information received from the central server, and to manipulate content of web applications;

a communications link for connecting the system client to the central server;

the central server that connects to the system client for at least processing requests for data information stored in system storage systems, processing data information retrieved based on requests, and transmitting retrieved data information to the system client, with the central server at least comprising,

a server application that receives requests for data information from the system client and transmits responses of requests to the system client,

display files for providing display definitions for use in converting web applications so that such converted web applications are enabling at the system client,

central server code for controlling the retrieval of data information stored in the system storage systems,

a display object for effecting communications between the central system code and the server application,

the system storage systems for storing data information that is capable of being retrieved based on requests sent from the system client;

a first conversion tool that connects to the central server code for adding code to the central system code, with the added code for controlling the transmission path of data information through the central server to include the display object and by-pass the display files;

a second conversion tool that connects to the server application and receives an input from the display files, with the second conversion tool for assigning a classification to the data information being transmitted from the central server to the system client according to a predetermined classification scheme based on the display definitions input from the display files; and

a third conversion tool that connects to the server application and receives an input from the display files, with the third conversion tool for the formatting responses that are being transmitted from the central server to the system client according to a predetermined format with the format being such that the content of web applications may be manipulated by the client controls at the system client.

2. The system as recited in claim 1, wherein the system client includes a web browser.

3. The system as recited in claim 2, wherein the web browser includes a personal computer or computer workstation.

4. The system as recited in claim 1, wherein the client manager includes a dynamic hyper-text mark-up language ("DHTML") manager.

5. The system as recited in claim 1, wherein the system client is formed within an extensible mark-up language ("XML") environment for communications to and from the central server.

6. The system as recited in claim 1, wherein the communications link between the system client and the central server is according to a predetermined protocol.

7. The system as recited in claim 6, wherein the protocol for the communications link includes hyper-text transmission protocol ("HTTP").

8. The system as recited in claim 7, wherein the client controls have input means for the system user to interact with web applications to request data information based on an intent and a purpose of web applications, to cause the display of the data information that is received from the central server, and to manipulate data information received from the central server, and

to manipulate content of web applications.

9. The system as recited in claim 1, wherein the server application includes a server object to which the third conversion tool connects.

10. The system as recited in claim 9, wherein the server application includes servlets to which the second conversion tool connects.

11. The system as recited in claim 1, wherein the display object includes a buffer.

12. The system as recited in claim 11, wherein the display object assembles the buffer for data information that is to be sent to the system client.

13. The system as recited in claim 12, wherein the display object disassembles the buffer for data information that is to be sent to the central system code.

14. The system as recited in claim 1, wherein the central system code includes RPG code.

15. The system as recited in claim 14, wherein the first conversion tool concatenates code to existing RPG code.

16. The system as recited in claim 15, wherein the first conversion tool concatenates RPG code to existing RPG code.

17. The system as recited in claim 4, wherein the third conversion tool formats responses in a DHTML format for input to the DHTML manager at the system client.

18. The system as recited in claim 1, wherein the system converts web applications that exist on the system that would have used the display files if such display file were not by-passed.

19. A three tier web-based computer system for enabling web applications at a presentation tier, comprising:

the presentation tier for controlling processing for manipulating and displaying data information formatted according to a predetermined format received from a middle tier, and for manipulating content of web applications;

a communications link for connecting the presentation and middle tiers;

the middle tier for processing requests from the presentation tier for data information stored in system storage systems, transmitting data information formatted according to a predetermined format to the presentation tier;

a business tier for processing requests received from the middle tier and controlling the retrieval of data information from system storage systems based on the requests;

the system storage systems for storing data information that is capable of being retrieved based on requests sent from the presentation tier;

a first conversion tool that connects to the business tier for adding code to business tier code, with the added code for controlling the transmission path of data information through the business tier to include a display object and by-pass display files;

a second conversion tool that connects to the middle tier and receives an input from the bypassed display files in the business tier, with the second conversion tool for assigning a classification to the data information being transmitted from the middle tier to the presentation tier according to a predetermined classification scheme based on the display definitions input from the display files; and

a third conversion tool that connects to the middle tier and receives an input from the display files, with the third conversion tool for the formatting responses that are being transmitted to the presentation tier according to the predetermined format with the format being such that the content of the web application may be manipulated at the presentation tier.

20. The system as recited in claim 19, wherein the presentation tier includes a web browser.

21. The system as recited in claim 20, wherein the web browser includes a personal computer or computer workstation.

22. The system as recited in claim 19, wherein the presentation tier includes a dynamic hyper-text mark-up language ("DHTML") manager.

23. The system as recited in claim 22, wherein the presentation tier is formed within an extensible mark-up language ("XML") environment for communications to and from the middle tier.

24. The system as recited in claim 19, wherein the communications link between the presentation tier and the middle tier is according to a predetermined protocol.

25. The system as recited in claim 24, wherein the protocol for the communications link includes hyper-text transmission protocol ("HTTP").

26. The system as recited in claim 25, wherein the presentation tier has input means

for a system user to interact with web applications to request data information based on an intent and a purpose of web applications, to cause the display of the data information that is received from the middle tier, to manipulate data information received from the middle tier, and to manipulate content of web applications.

27. The system as recited in claim 19, wherein the business tier code includes RPG code.

28. The system as recited in claim 27, wherein the first conversion tool concatenates code to existing RPG code.

29. The system as recited in claim 28, wherein the first conversion tool concatenates RPG code to existing RPG code.

30. The system as recited in claim 22, wherein the third conversion tool formats responses in a DHTML format for input to the DHTML manager at the presentation tier.

31. The system as recited in claim 19, wherein the system converts web applications that exist on the system that use the display files if such display file were not by-passed.

32. An open architecture, web-based computer system for enabling web applications at a system client, comprising:

a system client that a system user uses to interact with the web-based computer system, with the system client at least comprising,

client manager for controlling processing for manipulating and displaying data information received from a central server, and providing means for manipulating content of web applications at the system client,

a display for displaying data information from the central system and providing an interface to web applications for the system user,

client controls for providing the system user with an interface for interacting with web applications to request data information from system storage systems based on an intent and a purpose of the web applications, to cause the display of the data information that is received by the client manager from the central server, and to manipulate data information received from the central server, and to manipulate content of web applications;

a communications link for connecting the system client to the central server;

the central server that connects to the system client for at least processing requests for

data information stored in system storage systems, processing data information retrieved from a first system storage system based on requests, and transmitting retrieved data information to the client system, with the central server having central server code that controls the retrieval of data information stored in the first system storage system,

the first system storage system for storing data information that is capable of being retrieved based on requests sent from the system client;

a second system storage system for storing data information that is capable of being retrieved based on requests sent from the system client;

a first open architecture interface that connects to a first location of the central server;

a second open architecture interface that connects to a second location of the central server;

a third open architecture interface that connects to a third location of the central server;

a fourth open architecture interface that connects to a fourth location of the central server;

a fifth open architecture interface that connects to a fifth location of the central server;

a first conversion tool that connects to the first open architecture interface for adding code to central system code, with the added code for controlling the transmission path of data information through the central server;

a second conversion tool that connects to the second open architecture interface for assigning a classification to the data information being transmitted from the central server to the system client according to a predetermined classification scheme;

a third conversion tool that connects to the third open architecture interface for the formatting responses that are being transmitted from the central server to the system client according to a predetermined format with the format being such that content of the web applications may be manipulated by the client controls at the system client;

a first development tool that connects to the fourth open architecture interface for receiving and processing new web applications for operation on the system, the first development tool connecting to the system client through the central server and the communications link and for receiving and processing requests received from the system client for new web applications; and

a second development tool that connects to the fifth open architecture interface for receiving and processing requests that have been processed by the first development tool, with the sec-

ond development tool being connected to the first development tool through the central server, and with the second development tool being connected to at least the second system storage system from which data information associated with the new web applications may be retrieved.

33. The system as recited in claim 32, wherein the system client includes a web browser.

34. The system as recited in claim 33, wherein the web browser includes a personal computer or computer workstation.

35. The system as recited in claim 32, wherein the client manager includes a dynamic hyper-text mark-up language ("DHTML") manager.

36. The system as recited in claim 32, wherein the system client is formed within an extensible mark-up language ("XML") environment for communications to and from the central server.

37. The system as recited in claim 32, wherein the communications link between the system client and the central server is according to a predetermined protocol.

38. The system as recited in claim 37, wherein the protocol for the communications link includes hyper-text transmission protocol ("HTTP").

39. The system as recited in claim 38, wherein the client controls have input means for the system user to interact with existing and new web applications to request data information based on an intent and a purpose of web applications, to cause the display of the data information that is received from the central server, and to manipulate data information received from the central server, and to manipulate content of web applications.

40. The system as recited in claim 32, wherein central server includes a server application with a server object and the third open architecture interface connects to the server object.

41. The system as recited in claim 40, wherein the server application includes servlets and the second open architecture interface connects to the servlets.

42. The system as recited in claim 32, wherein the central system code includes RPG code.

43. The system as recited in claim 42, wherein the first conversion tool concatenates code to existing RPG code.

44. The system as recited in claim 43, wherein the first conversion tool concatenates RPG code to existing RPG code.

45. The system as recited in claim 35, wherein the third conversion tool formats responses in a DHTML format for input to the DHTML manager at the system client.

46. The system as recited in claim 32, wherein the first, second, and third conversion tools convert existing web applications for enabling them at the system client.

47. The system as recited in claim 32, wherein the first and second development tools are for enabling new web applications at the system client.

48. A three tier web-based computer system for enabling web application at a presentation tier, comprising:

the presentation tier for controlling processing for manipulating and displaying data information formatted according to a predetermined format received from a middle tier, and for manipulating content of web applications;

a communications link for connecting the presentation and middle tiers;

the middle tier for processing requests from the presentation tier for data information stored in a first system storage system, transmitting data information formatted according to a predetermined format to the presentation tier;

a business tier for processing requests received from the middle tier and controlling the retrieval of data information from the first system storage system based on the requests;

a first system storage system for storing data information that is capable of being retrieved based on requests sent from the system client;

a second system storage system for storing data information that is capable of being retrieved based on requests sent from the presentation tier;

a first open architecture interface that connects to a first location of the business tier;

a second open architecture interface that connects to a second location of the middle tier;

a third open architecture interface that connects to a third location of the middle tier;

a fourth open architecture interface that connects to a fourth location of the middle tier;

a fifth open architecture interface that connects to a fifth location of the business tier;

a first conversion tool that connects to the first open architecture interface for adding code to the business tier code, with the added code for controlling the transmission path of data infor-

mation through the business tier;

a second conversion tool that connects to the second open architecture interface for assigning a classification to the data information being transmitted from the middle tier to the presentation tier according to a predetermined classification scheme;

a third conversion tool that connects to the third open architecture interface for the formatting responses that is being transmitted to the presentation tier according to a predetermined format with the format being such that content of the web applications may be manipulated by the client controls at the presentation tier;

a first development tool that connects to the fourth open architecture interface for receiving and processing new web applications for operation on the system, the first development tool connecting to the presentation tier through the middle tier and the communications link, and for receiving and processing requests received from the presentation tier for new web applications; and

a second development tool that connects to the fifth open architecture interface for receiving and processing requests that have been processed by the first development tool, with the second development tool being connected to the first development tool through the middle and business tiers, and with the second development tool being connected to at least the second storage system from which data information associated with the new web applications may be retrieved.

49. The system as recited in claim 48, wherein the presentation tier includes a web browser.

50. The system as recited in claim 49, wherein the web browser includes a personal computer or computer workstation.

51. The system as recited in claim 49, wherein the presentation tier includes a dynamic hyper-text mark-up language ("DHTML") manager.

52. The system as recited in claim 51, wherein the presentation tier is formed within an extensible mark-up language ("XML") environment for communications to and from the middle tier.

53. The system as recited in claim 48, wherein the communications link between the presentation tier and the middle tier is according to a predetermined protocol.

54. The system as recited in claim 53, wherein the protocol for the communications link includes hyper-text transmission protocol ("HTTP").

55. The system as recited in claim 54, wherein the presentation tier has input means for a system user to interact with existing and new web applications to request data information based on an intent and a purpose of web applications, to cause the display of the data information that is received from the middle tier, to manipulate data information received from the middle tier, and to manipulate content of web applications.

56. The system as recited in claim 48, wherein the business tier includes business tier code for controlling access to the first storage system.

57. The system as recited in claim 56, wherein the business tier code includes RPG code.

58. The system as recited in claim 57, wherein the first conversion tool concatenates code to existing RPG code.

59. The system as recited in claim 58, wherein the first conversion tool concatenates RPG code to existing RPG code.

60. The system as recited in claim 51, wherein the third conversion tool formats responses in a DHTML format for input to the DHTML manager at the presentation tier.

61. The system as recited in claim 48, wherein the first, second, and third conversion tools convert existing web applications for enabling them at the presentation tier.

62. The system as recited in claim 48, wherein the first and second development tools are for enabling new web applications at the presentation tier.

63. A method for converting existing web applications on a web-based computer system for enabling web applications at a system client, with the system including the system client with a client manager, display, and client controls; a communications link for connecting the system client to a central server; the central server with a server application, display files, and central server code; and at least one storage system, comprising the steps of:

(a) converting central server code by adding new code to central server code with the new code for causing transmission of data information through the central server to by-pass the display files and be processing by a display object;

(b) classifying at the central server data information retrieved from the storage system

according to a classification scheme of the display files;

(c) formatting at the central server retrieved data information being transmitted to the system client so that the retrieved data information may be displayed and manipulated at the system client and content of the web applications may be manipulated at the system client.

64. A method for converting existing web applications on, and adding new web applications to, a web-based computer system for enabling existing and new web applications at a system client, with the system including the system client with a client manager, display, and client controls; a communications link for connecting the system client to a central server; the central server with a server application, display files, and central server code; and at least a first and second storage systems, comprising the steps of:

(a) converting existing web applications by

(1) converting central server code by adding new code to central server code with the new code for causing transmission of data information through the central server to bypass the display files and be processing by a display object;

(2) classifying at the central server data information retrieved from the first storage system according to a classification scheme of the display files; and

(3) formatting at the central server data information being transmitted to the system client so that the data information retrieved from the first storage system may be displayed and manipulated at the system client and content of the web applications may be manipulated at the system client; and

(b) adding new web applications by

(1) adding new web applications to a first development tool that connects to the central server and the first development tool connects to the system client through the central server and the communications link, with the first development tool for receiving and processing requests received from the system client for new web applications; and

(2) processing with a second development tool requests that have been processed by the first development tool, with the second development tool being connected to the first development tool through the central server, and with the second development tool being connected to at least the second system storage system from which data information associated with the new web applications may be retrieved.

65. The system as recited in claim 4, 22, 35, or 51 wherein the client manager includes a DHTML/XML (extensible mark-up language) manager.